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EXAMINER	
PARK, JEONG S	

ART UNIT	PAPER NUMBER
2454	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,609	CLARK, JONATHAN A	
	Examiner	Art Unit	
	JEONG S. PARK	2454	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8/29/2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 14-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 14-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to Application No. 10/762,423 filed on 22 January 2004. The arguments presented on 8/29/2008 are hereby acknowledged. Claims 1-10 and 14-16 have been examined.

Claim Objections

2. Applicant's arguments presented on 8/29/2008 are persuasive. All prior objections to the claims are hereby withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-10 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zisapel et al. (hereinafter Zisapel)(U.S. Patent No. 6,665,702 B1) in view of Apostolopoulos et al. (hereinafter Apostolopoulos)(U.S. Patent No. 6,868,083 B2), and further in view of Mizuno (U.S. Pub. No. 2003/0018741 A1).

Regarding claim 1, Zisapel teaches as follows:

A server (150 in figure 3A) for providing data (polling results) on receipt of requests (polling requests) from user terminals (client 105 in figure 3A via a content router 145 in figure 3A) over a distributed information network (Internet 110 in figure 3A) (provide efficient connectivity between client and Internet servers by sending polling request and receiving reply, see, e.g., col. 15, lines 66-67 and col. 16, lines 15-18), said

server comprising:

First means arranged to identify whether a plurality of addresses (content router, 145 in figure 3A, assigns respective network addresses to client 105 in figure 3A, see, e.g., col. 16, lines 11-12) making a corresponding plurality of requests for identical data (three polling requests are sent to the same destination, see, e.g., col. 16, lines 12-13) are associated with a same end user (the content router provides efficient connectivity between client 105 in figure 3A and Internet servers, which implicitly provides the end user's address to the Internet servers, see, e.g., col. 15. line 56 to col. 16, line 3).

Zisapel does not teach that splitting the requested data and streaming different parts of the data to the different addresses requesting it.

Apostolopoulos teaches as follows:

A path diversity transmission system for improving the quality of communication over a lossy packet network and the path diversity transmission system sends different subsets of packets (different pats of the data) over different paths (different addresses requesting it)(path diversity mechanism, see, e.g., col. 3, lines 32-36 and col. 4, lines 27-33);

Multiple paths can be used where all of these paths are used simultaneously (see, e.g., col. 9, lines 64-67);

One stream of packets may be sent via a satellite link while another stream of packets may be sent via a conventional wired link. These two streams traverse different paths (see, e.g., col. 12, lines 44-48);

Path diversity can be achieved by directing different streams of packets to each

of the different ISPs (see, e.g., col. 12, lines 31-35);

The overall data rate from each path is an aggregate of individual data rates available to each of the plurality of paths (each subset includes a portion of the packet stream and sends to the same final destination through different paths, see, e.g., col. 5, lines 20-35 and col. 7, lines 60-65); and

Also the path diversity mechanism is suited to address the needs of real-time or high quality multimedia communication since the path diversity system provides improved packet-level communication quality (see, e.g., col. 4, line 50 to col. 5, line 7).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include the path diversity mechanism as taught by Apostolopoulos in order for reliable communication over the Internet for high quality multimedia and better performance of available multiple paths.

Even though Zisapel in view of Apostolopoulos implicitly teach providing end user's address to the Internet servers, Mizuno explicitly teaches as follows:

A storage subsystem that directly interfaces with a network, provides connections for routers with a multi-path function, and performs access load balancing among a plurality of input/output ports. Each channel controller is assigned with a channel controller network address, and a storage device is assigned with a storage device address, which is different from the network addresses of the channel controllers (see, e.g., abstract);

The channel controller (403-410 in figure 1) makes the external router (403 in figure 1) believe that there is a device with the storage device IP address which is

different from the IP addresses assigned to the channel controllers (the storage device uses its own device IP address and multiple network IP addresses, see, e.g., page 3, paragraph [0063]); and

The router (402 in figure 1) the channel controllers (403-410 in figure 1) are interconnected with each other via the input/output ports and an access packet is sent from the host computer (401 in figure 1) to access the storage device (460 in figure 1). The access packet designates the address of the storage device (see, e.g., page 3, paragraph [0066]).

Therefore, Mizuno teaches the communication between a host computer and a storage device via multiple channel controllers' IP addresses, and the storage device IP address is given to the host computer for this communication.

Also it is well known in the art that any sending device knows the address of receiving device as well as the IP addresses of routers in the multi-path routing.

It would be obvious to combine Mizuno with Zisapel in view of Apostolopoulos to include using channel controller's IP address and the storage device's IP address together in communication between the host computer and the storage device as taught by Mizuno in order to efficiently utilize the existing multi-path between two network devices by the existing well known load balancing technology.

Regarding claim 2, Zisapel teaches as follows:

Means for identifying correlation codes associated with data requests, means for associating each data request with any previous requests for the same data having a same correlation code (content router first checks to determine if the destination is

known from the destination table, see, e.g., col. 18, lines 49-51 and figure 6 and 7).

Zisapel does not teach that means for splitting the requested data between the addresses associated with the data requests.

Apostolopoulos teaches as follows:

Means for splitting the requested data (packetizer, 200 in figure 2, specify how a bit stream is to be split into packets, see, e.g., col. 5, lines 30-32 and figure 2 and multiple stream generator, 210 in figure 2, generates at least a first stream and a second stream, see, e.g., col. 5, lines 37-40) between the plurality of addresses associated with the data requests (path diversity mechanism, 134 in figure 1, sends at least a first subset packets through a first path 160 and a second subset 170 of packets through a second path, see, e.g., col. 4, lines 26-29).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include splitting the requested data and streaming different parts of the data to the different addresses requesting it as taught by Apostolopoulos in order for reliable communication over the Internet and better performance of available multiple paths with load balancing among that paths.

Regarding claims 3, 9 and 15, Zisapel teaches as follows:

Means for identifying data rates available to each of the requesting addresses (the content router presents to the client the most efficient pathway for choosing connection to the destination. Each path posses a path quality factor, which includes traffic load, packet loss and link pricing, see, e.g., col. 17, lines 41-56).

Zisapel does not teach that means for apportioning the data between the

addresses accordingly.

Apostolopoulos teaches as follows:

Based on the network information, route information, and quality of service requirements, the diverse path transmitter, 240 in figure 2, selectively transmits each subset of packets on a predetermined path (see, e.g., col. 6, lines 11-16 and figure 2).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include apportioning the subset of packets to different paths based on the capability of each path as taught by Apostolopoulos in order for reliable communication over the Internet and better performance of available multiple paths with load balancing among that paths.

Regarding claim 4, Zisapel teaches as follows:

A user terminal (client 105 and content router 145 in figure 3A) for accessing data from a server over a distributed information network (Internet 110 in figure 3A)(see, e.g., col. 15, line 61 to col. 16. line 3), said user terminal comprising:

Means for generating a plurality of access requests for identical data to be delivered by the server over a plurality of routes (routers 1 to 3, 130, 135, 140 in figure 3A)(content router sends polling requests through each of routers, see, e.g., col. 16, lines 6-10), wherein each request conveys an indication of its common origin to the targeted server (the content router provides efficient connectivity between client 105 in figure 3A and Internet servers, which implicitly provides the end user's address to the Internet servers, see, e.g., col. 15. line 56 to col. 16, line 3).

Zisapel does not teach that assembling the data sent over the plurality of routes

into a single stream for access by the user.

Apostolopoulos teaches as follows:

The receiving device (140 in figure 1) includes a packet sorter (310 in figure 3) for receiving the subsets of packets and sorting the packets to recover the original order of the packets and a recovery unit (320 in figure 3) for receiving the packets in original order and for reconstructing the communicated information (see, e.g., col. 7, lines 1-6);

A path diversity transmission system for improving the quality of communication over a lossy packet network and the path diversity transmission system sends different subsets of packets (different pats of the data) over different paths (different addresses requesting it)(path diversity mechanism, see, e.g., col. 3, lines 32-36 and col. 4, lines 27-33);

Multiple paths can be used where all of these paths are used simultaneously (see, e.g., col. 9, lines 64-67);

One stream of packets may be sent via a satellite link while another stream of packets may be sent via a conventional wired link. These two streams traverse different paths (see, e.g., col. 12, lines 44-48);

Path diversity can be achieved by directing different streams of packets to each of the different ISPs (see, e.g., col. 12, lines 31-35);

The overall data rate from each path is an aggregate of individual data rates available to each of the plurality of paths (each subset includes a portion of the packet stream and sends to the same final destination through different paths, see, e.g., col. 5, lines 20-35 and col. 7, lines 60-65); and

Also the path diversity mechanism is suited to address the needs of real-time or high quality multimedia communication since the path diversity system provides improved packet-level communication quality (see, e.g., col. 4, line 50 to col. 5, line 7).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include the path diversity mechanism as taught by Apostolopoulos in order for reliable communication over the Internet for high quality multimedia and better performance of available multiple paths.

Even though Zisapel in view of Apostolopoulos implicitly teach providing end user's address to the Internet servers, Mizuno explicitly teaches as follows:

A storage subsystem that directly interfaces with a network, provides connections for routers with a multi-path function, and performs access load balancing among a plurality of input/output ports. Each channel controller is assigned with a channel controller network address, and a storage device is assigned with a storage device address, which is different from the network addresses of the channel controllers (see, e.g., abstract);

The channel controller (403-410 in figure 1) makes the external router (403 in figure 1) believe that there is a device with the storage device IP address which is different from the IP addresses assigned to the channel controllers (the storage device uses its own device IP address and multiple network IP addresses, see, e.g., page 3, paragraph [0063]); and

The router (402 in figure 1) the channel controllers (403-410 in figure 1) are interconnected with each other via the input/output ports and an access packet is sent

from the host computer (401 in figure 1) to access the storage device (460 in figure 1). The access packet designates the address of the storage device (see, e.g., page 3, paragraph [0066]).

Therefore Mizuno teaches the communication between a host computer and a storage device via multiple channel controllers' IP addresses, and the storage device IP address is given to the host computer for this communication.

Also it is well known in the art that any sending device knows the address of receiving device as well as the IP addresses of routers in the multi-path routing.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine Mizuno with Zisapel in view of Apostolopoulos to include using channel controller's IP address and the storage device's IP address together in communication between the host computer and the storage device as taught by Mizuno in order to efficiently utilize the existing multi-path between two network devices by the existing well known load balancing technology.

Regarding claim 5, Zisapel teaches as follows:

Means for generating a first access request (polling requests) having a correlation code indicative of its origin (client IP address and each router address)(see, e.g., col. 16, lines 4-14); and

Means for determining the best path among multiple paths (see, e.g., col. 17, lines 63-65).

Zisapel does not teach that means for determining whether the data rate of the data received in response to the first request meets a predetermined level and means to

generate one or more further requests over different routes using the same correlation code.

Apostolopoulos teaches as follows:

Based on the network information, route information, and quality of service requirements (predetermined level), the diverse path transmitter (240 in figure 2) selectively transmits each subset of packets on a predetermined path (see, e.g., col. 6, lines 11-16 and figure 2).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to utilize multiple paths to transmit the same data based on the quality of service requirements of the data and the capacities of the multiple paths by determining the proper paths before the first transmission as taught by Apostolopoulos in order to determine proper paths among all available paths based on the service requirements of the data and the route information for each paths before first transmission and utilize the proper paths based on the determination.

Regarding claims 6 and 10, Zisapel teaches all the claim limitations except for buffering the incoming data to allow its reassembly in a manner prescribed by the data content.

Apostolopoulos teaches as follows:

The receiving device (140 in figure 1) includes a packet sorter (310 in figure 3) for receiving the subsets of packets and sorting the packets to recover the original order of the packets and a recovery unit (320 in figure 3) for receiving the packets in original order and for reconstructing the communicated information (see, e.g., col. 7, lines 1-6).

It is well known in the art and inherent to have buffering means to accomplish the packet sorting in order to recover the original information after being received subsets of the original information through different paths.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include buffering means as taught by Apostolopoulos in order to reassemble the original information properly.

Regarding claim 7, Zisapel in view of Apostolopoulos and further in view of Mizuno teach all the limitations of claim as presented above per claims 1 and 4.

Regarding claim 8, Zisapel in view of Apostolopoulos and further in view of Mizuno teach all the limitations of claim as presented above per claims 1, 4 and 5.

Regarding claim 14, Zisapel teaches as follows:

A method of providing data to one or more user terminals (client 105 in figure 3A via a content router 145 in figure 3A) connected to a network (Internet 110 in figure 3A) (provide efficient connectivity between client and Internet servers by sending polling request and receiving reply, see, e.g., col. 15, lines 66-67 and col. 16, lines 15-18), comprising:

Receiving a plurality of data requests (polling requests) for identical data (polling results) from a plurality of requesting addresses (content router, 145 in figure 3A, assigns respective network addresses to client 105 in figure 3A, see, e.g., col. 16, lines 11-12)(content router sends polling requests through each of routers, see, e.g., col. 16, lines 6-10), wherein each data request includes an identification of a requesting user terminal (the content router provides efficient connectivity between client 105 in figure

3A and Internet servers, which implicitly provides the end user's address to the Internet servers, see, e.g., col. 15. line 56 to col. 16, line 3).

Zisapel does not teach that means for splitting the requested data between the addresses associated with the data requests.

Apostolopoulos teaches as follows:

The receiving device (140 in figure 1) includes a packet sorter (310 in figure 3) for receiving the subsets of packets and sorting the packets to recover the original order of the packets and a recovery unit (320 in figure 3) for receiving the packets in original order and for reconstructing the communicated information (see, e.g., col. 7, lines 1-6);

A path diversity transmission system for improving the quality of communication over a lossy packet network and the path diversity transmission system sends different subsets of packets (different pats of the data) over different paths (different addresses requesting it)(path diversity mechanism, see, e.g., col. 3, lines 32-36 and col. 4, lines 27-33);

Multiple paths can be used where all of these paths are used simultaneously (see, e.g., col. 9, lines 64-67);

One stream of packets may be sent via a satellite link while another stream of packets may be sent via a conventional wired link. These two streams traverse different paths (see, e.g., col. 12, lines 44-48);

Path diversity can be achieved by directing different streams of packets to each of the different ISPs (see, e.g., col. 12, lines 31-35);

The overall data rate from each path is an aggregate of individual data rates

available to each of the plurality of paths (each subset includes a portion of the packet stream and sends to the same final destination through different paths, see, e.g., col. 5, lines 20-35 and col. 7, lines 60-65); and

Also the path diversity mechanism is suited to address the needs of real-time or high quality multimedia communication since the path diversity system provides improved packet-level communication quality (see, e.g., col. 4, line 50 to col. 5, line 7).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include the path diversity mechanism as taught by Apostolopoulos in order for reliable communication over the Internet for high quality multimedia and better performance of available multiple paths.

Even though Zisapel in view of Apostolopoulos implicitly teach providing end user's address to the Internet servers, Mizuno explicitly teaches as follows:

A storage subsystem that directly interfaces with a network, provides connections for routers with a multi-path function, and performs access load balancing among a plurality of input/output ports. Each channel controller is assigned with a channel controller network address, and a storage device is assigned with a storage device address, which is different from the network addresses of the channel controllers (see, e.g., abstract);

The channel controller (403-410 in figure 1) makes the external router (403 in figure 1) believe that there is a device with the storage device IP address which is different from the IP addresses assigned to the channel controllers (the storage device

uses its own device IP address and multiple network IP addresses, see, e.g., page 3, paragraph [0063]); and

The router (402 in figure 1) the channel controllers (403-410 in figure 1) are interconnected with each other via the input/output ports and an access packet is sent from the host computer (401 in figure 1) to access the storage device (460 in figure 1). The access packet designates the address of the storage device (see, e.g., page 3, paragraph [0066]).

Therefore Mizuno teaches the communication between a host computer and a storage device via multiple channel controllers' IP addresses, and the storage device IP address is given to the host computer for this communication.

Also it is well known in the art that any sending device knows the address of receiving device as well as the IP addresses of routers in the multi-path routing.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine Mizuno with Zisapel in view of Apostolopoulos to include using channel controller's IP address and the storage device's IP address together in communication between the host computer and the storage device as taught by Mizuno in order to efficiently utilize the existing multi-path between two network devices by the existing well known load balancing technology.

Regarding claim 16, Apostolopoulos teaches as follows:

Limiting a number of connections available to the same user terminal to a predetermined threshold number such that a number of simultaneous connections for the same data for the same user terminal is limited (the application and the path-

diversity aware node (1008 in figure 10) negotiate to determine an appropriate combination of number of paths, QoS for each path, and available paths before beginning the connection, as well as make changes during the connection, see, col. 11, lines 4-37).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to include determining the number of paths available for each receiving packet before beginning the connection as taught by Apostolopoulos in order for reliable communication over the Internet and better performance of available multiple paths with load balancing among that paths.

Response to Arguments

5. Applicant's arguments filed 8/29/2008 have been fully considered but they are not persuasive.

A. Summary of Applicant's Arguments

In the remarks, the applicant argues as followings

1) The present claims require that the various data streams run simultaneously such that the overall data rate at the receiver is an aggregate of those transmitted. Apostolopoulos mentions, in passing, that simultaneous transmission is possible, but it is clear that the aim of his system is to obtain not an aggregate (N1 + N2 + N3 +.......... Nn) but an average (N1 + N2 + N3 + ...Nn)/n). See, for example, column 4 lines 34- 49, and column 13, line 14. The specification describes the assignment to paths being sequential (column 6, lines 58-64), and using path-hopping diversity (column 6 lines 33-47).

2) Apostolopoulos' object is robustness rather than speed (e.g., column 2 lines 13- 16, column 9 lines 35-40). In contrast, the present invention is particularly concerned with improving the bit rate beyond that possible over a single link. There is no suggestion in Apostolopoulos that bandwidth constraints would have prevented a single one of the links delivering data at the rate required. Thus although Apostolopoulos clearly delivers the aggregate of the rates carried over the individual links, it is not delivering the aggregate of the rates available to each individual address, which is required by the present claims.

3) Moreover, in Apostolopoulos the splitting and combining of data streams happens in the network. See path diversity mechanism 134 (Figure 1) and the path-splitting and path-combining nodes 502,504 (Figure 5). The present invention requires that the path diversity is controlled, not in the network, but in the end-users' equipments. See present claims. This puts the control of the system with the user, rather than in the network, allowing the user to decide whether to pay for several network connections to obtain the extra speed available by accessing the same database over a plurality of paths. None of the references disclose the extension of path diversity beyond the network into the applications run on the user terminal.

4) More particularly, combining the disclosures of Zisapel and Apostolopoulos could result in a system in which data (generated, e.g., by Zisapel's system) might be fed to a network which transmits the data using route diversity to a destination terminal. There is no suggestion in either reference, however, that diversity can be extended into and even beyond the network into the user-controlled applications

at either end.

5) Mizuno is concerned with routing of data requests from a host computer 401 to a storage system 450, the router 402 being arranged to selectively route each request through one of several channel controllers 403-410, each having their own address, in order to balance loadings. This therefore provides multiple routes between the router 402 and the storage system 470. This is provided to allow parallel access to the database by multiple users - there is no suggestion of breaking a data transmission into separate elements and transmitting them over multiple paths to the same user terminal destination, nor yet of extending diversity into the user terminal.

B. Response to Arguments

In response to argument 1), Apostolopoulos teaches as follows:

the path diversity mechanism explicitly sends different subsets of packets over different paths (see, e.g., col. 4, liens 34-49);

the average path behavior because all the packets are distributed through different paths not for one path at a time (see, e.g., col. 9, lines 64-67 and col. 12, lines 44-48); and

multiple paths can be used where all of these paths are used simultaneously (see, e.g., col. 9, lines 65-67).

The applicant mentioned column 6, lines 58-64 describe the deterministic sequential fashion to assign a path to each packet not the applicant's interpreted sequential transmission.

In response to argument 2), Since Apostolopoulos teaches that multiple paths

can be used where all of these paths are used simultaneously (see, e.g., col. 9, lines 65-67). Apostolopoulos inherently delivers the aggregate of the rates carried over the multiple paths.

In response to argument 3) and 4), Zisapel teaches a client (105 in figure 3A) is connected to the Internet through multiple ISPs via a content router (145 in figure 3A).

Apostolopoulos teaches that multiple paths can be used where all of these paths are used simultaneously with the path diversity mechanism (see, e.g., col. 9, lines 65-67).

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to modify Zisapel to implement the path diversity mechanism as taught by Apostolopoulos in the Zisapel's content router which is connected to the client or implement on each client.

In response to argument 5), Mizuno teaches the communication between a host computer and a storage device via multiple channel controllers' IP addresses, and the storage device IP address is given to the host computer for this communication.

Apostolopoulos teaches as follows:

path diversity can be achieved by directing different streams of packets to each of the different ISPs (see, e.g., col. 12, lines 31-35); and

the overall data rate from each path is an aggregate of individual data rates available to each of the plurality of paths (each subset includes a portion of the packet stream and sends to the same final destination through different paths, see, e.g., col. 5, lines 20-35 and col. 7, lines 60-65).

Therefore, Apostolopoulos teaches of breaking a data transmission into separate elements and transmitting them over multiple paths to the same user terminal destination.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEONG S. PARK whose telephone number is (571)270-1597. The examiner can normally be reached on Monday through Friday 7:00 - 3:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S. P./
Examiner, Art Unit 2454

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